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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,843	09/29/2003	S. Mark Haugland	PAT009CON	2525

32656 7590 06/16/2006  
W-H ENERGY SERVICES, INC.  
10370 RICHMOND AVENUE  
SUITE 990  
HOUSTON, TX 77042

EXAMINER

TAYLOR, VICTOR J

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/673,843	Applicant(s) HAUGLAND, S. MARK	
	Examiner Victor J. Taylor	Art Unit 2863	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/29/03, 11/17/03</u> . | 6) <input checked="" type="checkbox"/> Other: <u>Office Action</u> .                    |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings were received on 29 September 2003. These drawings are approved.

### ***Information Disclosure Statement***

2. The information disclosure statement filed 29 September 2003 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the reference numbered "BJ" has no publication dates. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

### ***Specification***

3. The disclosure is objected to because of the following informalities:

The first section of the specification titled "Related Applications" is incomplete and needs correction to include the statement for the continuation and CIP of applications as indicated on the BIB data sheet. This includes US 10/673,843, which is a continuation of US 10/086,043, and which is a CIP of US 09/877,833 now US Patent 6,631,328, and which is a CIP of US 09/608,205 now US Patent 6,366,858. The

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declaration filed on 3/29/2003 comprises one sheet and does not list this sequence of applications required under 37 CFR 1.56. Appropriate correction is required.

4. The disclosure is objected to because of the following informalities:

a. The use of the term "infinitesimal" in the claims and in claims 5 and 23 and 36 and elsewhere in the specification to describe the size of the bi-pole transmitting antenna. This term is finite and defined and used in mathematics to define an infinitely small number. It is not clear in the specification and in the claims just what the term for the "infinitely small number antenna" is used for. Correction or clarification is requested.

b. The use of the term for "substantial vacuum" in the claims and in the specification is objected too. It is not clear in the specification and in the claims just what the term for the "substantial vacuum" is used for or just what is "substantial" for a vacuum. Correction or clarification is requested. Appropriate correction is required.

#### **Prior Art**

5. The prior art made of record and not relied upon is considered pertinent to applicant.

I. Art A of Meyer et al., US Patent 5,892,361 A in class 324/338 is cited for the measurement of borehole parameters and the propagation resistivity device and modeling the response see figure 1 and the abstract.

II. Art B of Clark et al., US Patent 4,968,940 A in class 324/338 is cited for the well logging of resistivity parameters with two spaced apart transmitters and the computer processes and computations see abstract and figure 1.

***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-45 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter and are drawn to a computation method for estimating the electrical parameters of an earth formation using a BHA measuring device in the borehole of an earth formation with a model and computation processes and processing the formation data that fail to show the clear, concrete and tangible results.

Claim 1 provides computational steps for providing a simplified model making at least one simplifying assumption about the pre-established model and computation steps for receiving collected formation data and provides computation processes steps for normalizing data and computation steps for applying renormalized data processes that are based on computer processes computations that show no clear and concrete and tangible results.

For the result to be tangible it would need to output to a user or displayed to a user or stored for later use. Hence the claims are treated as non-statutory functional descriptive material (See MPEP Sec. 2106).

Claims 2-19 are based on a rejected base claim 1 and are rejected for at least the reason cited above.

In addition, Claim 11 in combination with claim 1 is directed towards an algorithm for use in estimating a conditional probability distribution for a signal process. The claims do not produce any tangible results and are an abstract idea and a physical transformation.

The practical application of the claimed invention cannot be realized until the information determined is conveyed to the user.

For the result to be tangible it would need to output to a user or displayed to a user or stored for later use. Hence the claims are treated as non-statutory functional descriptive material (See MPEP Sec. 2106).

Claim 20 provides a processor readable medium on which processor software code is stored with computational steps for providing computation code logic steps for processing the received collected formation data and provides computation processes steps for normalizing the data and provides the computation steps for applying renormalized data processes that are based on computer processes software code computations that show no clear and concrete and tangible results.

For the result to be tangible it would need to output to a user or displayed to a user or stored for later use. Hence the claims are treated as non-statutory functional descriptive material (See MPEP Sec. 2106).

Claims 21- 32 are based on a rejected base claim 20 and are rejected for at least the reason cited above.

In additional, Claim 27 in combination with claim 20 is directed towards an algorithm for use in estimating a conditional probability distribution for a signal process. The claims do not produce any tangible results and are an abstract idea and a physical transformation.

The practical application of the claimed invention cannot be realized until the information determined is conveyed to the user.

For the result to be tangible it would need to output to a user or displayed to a user or stored for later use. Hence the claims are treated as non-statutory functional descriptive material (See MPEP Sec. 2106).

Claim 33 provides processes and computational steps for estimating the electrical parameters from the collected formation data and provides the computation processes steps for a model and a pre-established model with the models based on computer processes computations that show no clear and concrete and tangible results.

For the result to be tangible it would need to output to a user or displayed to a user or stored for later use. Hence the claims are treated as non-statutory functional descriptive material (See MPEP Sec. 2106).

Claims 34- 41 are based on a rejected base claim 33 and are rejected for at least the reason cited above.

Claim 42 provides computational steps using transforms and equations for computation processes and modeling computer process of collected formation data and for estimating the electrical parameters from the collected formation data and provides the computation processes steps for a model and a pre-established model that are

based on the computer processes computations with the steps for receiving and normalizing processes directed towards an algorithm for use in estimating a model probability distribution for a renormalized data process that show no clear and concrete and tangible results.

The claim does not produce any tangible results and are an abstract idea and a physical equation transformation.

The practical application of the claimed invention cannot be realized until the information determined is conveyed to the user.

For the result to be tangible it would need to output to a user or displayed to a user or stored for later use. Hence the claims are treated as non-statutory functional descriptive material (See MPEP Sec. 2106).

Claims 43-45 are based on a rejected base claim 42 and are rejected for at least the reason cited above.

See MPEP 2106 and United States Patent and Trademark Office Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility **OG Notices: 22 November 2005** and the 101 issues as found in the inter-net location, <http://www.uspto.gov/web/offices/com/sol/og/2005/week47/patgupa.htm>.

### ***Allowable Subject Matter***

7. Claims 1, 11, 20, 27, 33 and 42 stand rejected based on the 101 issues stated above.



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8. Claims 2-10, 12-17 and 21-32, and 34-41 and 43-45 are objected to as being dependent upon a rejected base claim, but would be allowable over the cited art of record if rewritten into independent form including all of the limitations of the base claims and any intervening claims.


**Conclusion**


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor J. Taylor whose telephone number is 571-272-2281. The examiner can normally be reached on 8:00 to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571-272-2863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

V. J. Taylor

  
1 June 2006.

  
MICHAEL NGHIEM  
PRIMARY EXAMINER